Sun Fire™ 880 Server Product Notes

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Contents

Sun Fire 880 Product Notes

Product Name Equivalence

The official released name for this system is Sun Fire™ V880. Any reference to Sun Fire 880 on the product, in the system documentation, or in software refers to the Sun Fire V880. Both names can be considered equivalent and are interchangeable.

Document Revision History

This section provides a summarized revision history of these Product Notes, listed according to the document revision number and release date. All the updates made in previous revisions are incorporated into the latest revision; that is, any updates made in the -13 revision will carry forward through any subsequent revisions. The first published version of this document is 806-6598-12, September 2001.

Revisions Made in 806-6598-15, December 2001

- Updated the list of "Required And Recommended Software Patches" on page 3
- Added "Supported Sun Rack for the Sun Fire 880" on page 12
- Added "Sun Fire 880 Server Rackmounting Caution Reminder" on page 12
- Added "Correction to Displaying POST Results" on page 18
- Added "Correction to the diag-trigger Setting for Enabling ASR" on page 18
- Added "Correct Usage of the ifconfig Command for PCI Hot-Plug" on page 18
- Added "Correction to the Attachment Point IDs for DR Procedures" on page 19
- Added "PCI Hot-plug insert message is wrong for slots 7 and 8 (BugID 4546219)" on page 26
- Added "PCI attachment points should be generic (BugID 4388625)" on page 26
- Added "Status LED may not shut off after PCI hot-plug (BugID 4403481)" on page 27

Revisions Made in 806-6598-14, October 2001

- Updated the list of “Required And Recommended Software Patches” on page 3
- Added keyswitch information to “Installing Sun Fire 880 FC-AL Backplane Firmware” on page 8
- Added “System Hang Recovery Procedure” on page 10
- Added “CE memory reporting is ambiguous (BugID 4491362)” on page 25

Revisions Made in 806-6598-13, October 2001

- Updated the list of “Required And Recommended Software Patches” on page 3
- Updated the list of “Sun PCI Cards That Support PCI Hot-Plug” on page 5
- Corrected and updated the 36 GB drive manufacturer numbers in “FC-AL Disk Drive Firmware Issues” on page 7
- Updated the FRU numbers for ordering DIMMs for the system in “Correction to FRU Part Numbers” on page 15

Available Online Documentation

A complete set of online documentation supporting Sun Fire 880 servers is available at the following URL:

`http://www.sun.com/products-n-solutions/hardware/docs`

Check this site periodically for the latest revisions of Sun Fire 880 product documentation, including the latest version of these Product Notes.

System Software Requirements

The Sun Fire 880 server requires the Solaris™ 8 7/01 operating environment or a compatible Solaris version. To verify that the proper version of the operating system is installed on your Sun Fire 880 server, examine the file `/etc/release`. The file should contain the text “Solaris 8 7/01” or identify a compatible Solaris version.

Required And Recommended Software Patches

This section lists software patches for the Sun Fire 880 server. You can obtain these patches from your authorized Sun service provider or by downloading them from the SunSolve Online[SM] web site at the following URL:

`http://sunsolve.sun.com`

The patches in these Product Notes are listed by the Solaris operating system version you may have installed on your system. For the most current list of Sun Fire 880 patches, search for the Info Doc "Highly Recommended Patches Sun Fire 880" on the SunSolve Online web site. For patch installation instructions, see the README file that accompanies each patch.

Required Software Patches for Solaris 8 10/01

Note – The following list represents required patches specific to the Sun Fire 880 system with the Solaris 8 10/01 operating system installed. These patches are available as of the publication date of these Product Notes.

Sun Fire 880 Required Patches for Solaris 8 10/01

Patch ID	Description
109962-04 or later	FC-AL Disk Drive Firmware patch
109882-05 or later	SunOS 5.8: eri header files patch
109888-13 or late	SunOS 5.8: Platform drivers patch
111474-04 or later	Sun Fire 880 Fibre-Channel Backplane Firmware patch
111412-05 or later	SunOS 5.8: mpxio/scsi_vhci multipath I/O modules patch
111413-05 or later	SunOS 5.8: luxadm, liba5k and libg_fc patch*
111095-05 or later	SunOS 5.8: fctl/fp/fcp/usoc driver patch
111096-03 or later	SunOS 5.8: fcip driver patch
111097-05 or later	SunOS 5.8: qlc driver patch
110849-08 or later	SunOS 5.8: PICL support for SUNW, Sun Fire 880

* Patch 111413 requires the package SUNWsan (San Foundation Kit). The SUNWsan package is available via the Sun Download Center at the following URL:

http://www.sun.com/storage/san/

From that site, download the latest SAN release Software/Firmware upgrade.

Required Software Patches for Solaris 8 07/01

Note – The following list represents required patches specific to the Sun Fire 880 system with the Solaris 8 07/01 operating system installed. These patches are available as of the publication date of these Product Notes.

Sun Fire 880 Required Patches for Solaris 8 07/01

Patch ID	Description
109962-04 or later	FC-AL Disk Drive Firmware patch
108528-12 or later	Kernel update patch
110723-03 or later	SunOS 5.8: /kernel/drv/sparcv9/eri patch
109882-05 or later	SunOS 5.8: eri header files patch
109888-13 or late	SunOS 5.8: Platform drivers patch
110460-09 or later	SunOS 5.8: fruid/PICL plug-ins patch
111416-05 or later	RSC 2.1 bug fixes patch
111854-01 or later	SCSI VTS patch
111412-05 or later	SunOS 5.8: mpxio/scsi_vhci multipath I/O modules patch
111413-05 or later	SunOS 5.8: luxadm, liba5k and libg_fc patch*
111095-05 or later	SunOS 5.8: fctl/fp/fcp/usoc driver patch
111096-03 or later	SunOS 5.8: fcip driver patch
111097-05 or later	SunOS 5.8: qlc driver patch
110842-05 or later	SunOS 5.8: hpc3130 driver patch for SUNW, Sun Fire 880 Note: This patch must be installed before installing patch 110849-08 or later.
110849-08 or later	SunOS 5.8: PICL support for SUNW, Sun Fire 880 Note: You must install patch 110842-05 or later before installing this patch.

* Patch 111413 requires the package SUNWsan (San Foundation Kit). The SUNWsan package is available via the Sun Download Center at the following URL:

http://www.sun.com/storage/san/

From that site, download the latest SAN release Software/Firmware upgrade.

Highly Recommended Sun Fire 880 Patch

Patch ID	Description
112186-02 or later	Sun Fire 880 Flash PROM Update (4.4.7 OBP)

This patch is not OS-dependant. Included in this firmware upgrade are enhanced OpenBoot™ tools for service providers. The patch is recommended for Sun Fire 880 systems that have installed versions of OBP earlier than 4.4.7. For more information about the patch, including installation instructions, read the patch description.

Sun PCI Cards That Support PCI Hot-Plug

For a PCI card to be successfully detached from a running operating environment, each device on the card must have a detach-safe driver. A *detach-safe* driver enables a single instance of a driver to be closed while other instances are allowed to remain open to service similar devices used elsewhere in the system. To be considered detach-safe, a driver must be able to perform a basic Device Driver Interface/Device Kernel Interface (DDI/DKI) function called `DDI_DETACH`. Any driver that does not support the `DDI_DETACH` function is considered *detach-unsafe*.

Sun Microsystems offers a variety of hot-pluggable PCI cards that use detach-safe device drivers. The following table lists the PCI cards that have been tested and verified as being detach-safe as of the publication date of this document.

Sun Part Number	Card Type	Driver(s)
X1032A	10/100BaseT Sun FastEthernet + SE Ultra/Wide SCSI	fas/sd, hme
X1033A	10/100BaseT Sun FastEthernet PCI Adapter	hme
X6540A	Dual Channel Single-ended Ultra/Wide SCSI	glm
X6541A	Dual Channel Differential Ultra/Wide SCSI	glm
X6799A	Sun StorEdge PCI Single Fibre Channel Network Adapter	qlc
X1141A	Sun PCI Gigabit Ethernet Network Interface Card	ge
X1034A	Quad FastEthernet PCI Card	qfe
X1150A	Sun GigaSwift Ethernet Network Interface Card	ce

Note – Many third-party drivers (those purchased from vendors other than Sun Microsystems) do not support the `DDI_DETACH` function. Verify any third-party PCI card functionality and hot-plug compatibility with the third-party card's vendor prior to use in a production environment.

Note – Always wait for a PCI hot-plug operation to complete before initiating a new operation.

For more information about Sun Fire 880 PCI hot-plug operations, refer to the *Sun Fire 880 Dynamic Reconfiguration Guide*. This online document is available on the Solaris on Sun Hardware AnswerBook, which is provided on the Computer Systems Supplement CD for your specific Solaris release.

For an updated list of Sun PCI cards that support PCI hot-plug operations, see the latest revision of these Product Notes, available at the following URL:

`http://www.sun.com/products-n-solutions/hardware/docs`

Caution on the Use of PCI Cards Not Specifically Qualified by Sun on the Sun Fire 880 Platform

In order to ensure robust system operation, it is extremely important to ensure that any PCI cards and associated drivers installed in a Sun Fire 880 system have been qualified by Sun for use on the platform. It is possible for interactions to occur between cards and drivers on a specific bus that can lead to potential system panics or other negative outcomes if the card/driver solution has not been qualified. For an updated list of qualified PCI cards and configurations for the Sun Fire 880 system, contact your Sun authorized sales representative or service provider. For additional information, refer to the following URL:

`http://www.sun.com/io`

OpenBoot Firmware Documentation

The Sun Fire 880 server uses OpenBoot™ 4.x system firmware. Instructions for using the firmware are provided in the *OpenBoot 4.x Command Reference Manual*, an online version of which is included with the OpenBoot Collection AnswerBook that ships with Solaris software.

Note – Some versions of Solaris software do not include the OpenBoot 4.x documentation. If the OpenBoot 4.x documentation is not provided with your specific version of Solaris software, you can access the documentation online at `http://docs.sun.com`

FC-AL Disk Drive Firmware Issues

All FC-AL disk drives installed in a Sun Fire 880 system must meet the minimum firmware revision levels for Sun Fire 880 systems. Incorrect firmware can cause a variety of system problems that are often difficult to diagnose. To determine a disk drive's firmware revision level, use the `inquiry` feature of the Solaris `format(1M)` utility. The following table shows the minimum firmware revision levels for Sun Fire 880 disk drives as of the publication date of this document.

Sun Part No.	Capacity	Manufacturer	Minimum Firmware Revision Level
540-4525	36 GB	Seagate ST336605FC Seagate ST336704FC	0438 0726
540-4905	72 GB	Seagate ST373405FC	0438

Note – Drive capacities lower than 36 Gbytes are not supported on the Sun Fire 880.

For the most current list of Sun Fire 880 supported disk drives, see the latest revision of these Product Notes, available at the following URL:

`http://www.sun.com/products-n-solutions/hardware/docs`

Note – All Sun Fire 880 disk drives that are installed at the factory, shipped as customer-installable options, or installed as field-replaceable units (FRUs) meet the minimum firmware revision levels.

Installing Sun Fire 880 FC-AL Backplane Firmware

A backup image of the Sun Fire 880 FC-AL backplane firmware is provided on the Computer Systems Supplement CD for your specific Solaris release. In the unlikely event that the firmware on a Sun Fire 880 FC-AL backplane becomes corrupted, you can use the backup image to flash update the backplane with its original firmware. The flash update procedure is performed with the Solaris `luxadm` utility and is described below.

Before you can flash update the backplane, the firmware image must be copied from the Supplement CD to the Sun Fire 880 system disk. If you use Solaris Web Start to install the Supplement CD software, the Sun Fire 880 FC-AL Backplane Firmware is not included in the default installation. To install the backup firmware on the system disk, choose the Custom Install option and select the Sun Fire 880 FC-AL Backplane Firmware. For more information, see "Installing Supplement CD Software" in the *Solaris on Sun Hardware Platform Guide*.

Note – The latest version of the backplane firmware is always available on the SunSolve Online web site at `sunsolve.sun.com`. Whenever possible, you should download and install the firmware from the SunSolve site instead of the Supplement CD. The firmware on the Supplement CD is provided for emergency situations only, when it is not possible to access the SunSolve site. Depending on the specific Solaris release, the Supplement CD firmware may be older than the firmware available from SunSolve. To install the firmware from the SunSolve web site, see the instructions in the README file provided with the firmware image.

Whether installed from the Supplement CD or downloaded from the SunSolve web site, the firmware image is installed in the following default location on the Sun Fire 880 system disk:

```
/usr/platform/SUNW,Sun-Fire-880/lib/images/int_fcbpl_fw
```

Once the image is installed in this location, perform the flash update procedure as follows.

1. **As superuser, type the following command to bring the system to single-user mode:**

```
# init s
```

2. **Place the security keyswitch in the Normal position.**

   The Locked keyswitch position prevents unauthorized programming of the system flash PROMs.

3. **Type the following `luxadm` subcommand to begin the flash update process:**

```
# luxadm download -f firmware_path  enclosure_name
```

   Where:

   - *firmware_path* is the location of the firmware image on the system disk—in this case, `/usr/platform/SUNW,Sun-Fire-880/lib/images/int_fcbpl_fw`.
   - *enclosure_name* is the enclosure name assigned to the Sun Fire 880 internal storage array—by default, `FCloop`. If you need to verify the enclosure name first, use the `luxadm probe` subcommand.

Note – For more information about the `luxadm` utility, see *Platform Notes: Using luxadm Software*, part of the Solaris on Sun Hardware AnswerBook2 set on the Supplement CD.

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4. **When the superuser prompt reappears, wait at least 15 more minutes before continuing with this procedure.**

   This minimum wait time is required for the flash update process to propagate the firmware code to all SSC100 processors in the system. Do not attempt any other operations during this time.

5. **After the required waiting period, reboot the system to single-user mode. Type the following:**

```
# reboot -- -s
```

6. **To verify that the flash update process has successfully completed, type the following `luxadm` subcommand:**

```
# luxadm display enclosure_name
```

Where *enclosure_name* is the enclosure name assigned to the Sun Fire 880 internal storage array.

The command output shows the status of each SSC100 in the system. The following is an excerpt of sample output for a dual-backplane system.

```
SSC100's - 0=Base Bkpln, 1=Base LoopB, 2=Exp Bkpln, 3=Exp LoopB
    SSC100 #0:    O.K.(9224/ 120A)
    SSC100 #1:    O.K.(9224/ 120A)
    SSC100 #2:    O.K.(9224/ 120A)
    SSC100 #3:    O.K.(9224/ 120A)
```

Verify that each SSC100 displays an "O.K." status and that each displays the same firmware version in parentheses. If so, the flash update process has successfully completed. Otherwise, wait another two minutes or so and repeat this step.

7. **Once the flash update process is complete, restore the system to multiuser mode using the `init` command.**

   For example, type:

```
# init 3
```

8. **Place the security keyswitch in the Locked position.**

   The locked position is the recommended setting for normal day-to-day operations.

   The system can now resume normal operation.

System Hang Recovery Procedure

In the rare event that the system console hangs or appears to be in a reset loop, use the following procedure to recover from this situation. For more information, see "About OpenBoot Emergency Procedures" in the *Sun Fire 880 Server Owner's Guide* and "How to use POST Diagnostics" in the *Sun Fire 880 Server Service Manual*. For more information about Solaris related troubleshooting, see "Troubleshooting Software Problems" in the Solaris *System Administration Guide*.

1. **Ensure that the system is hanging.**

   a. **Determine if any network activity is functional via the `ping` command and if any existing logins from other users are active or responding.**

      If another login is active, use it to review the contents of `/var/adm/messages` for any indications of the system problem.

b. Determine if a console login session can be established through a ttya connection.

If a working console connection can be established, the problem may not be a true hang but instead a network related problem. For suspected network problems, attempt to ping, rlogin, or telnet to another system that is on the same sub-network, hub, or router that the system is on. If NFS services are served by the affected system, determine if NFS activity is present on other systems.

2. If there are no responding login sessions, record the state of the system LEDs.

The system LEDs may indicate a hardware failure in the system. Refer to your *Sun Fire 880 Server Owner's Guide* for more information on system LEDs.

3. Attempt to bring the system to the `ok` prompt by issuing the `Stop-A` command from your keyboard.

The `Stop-A` command attempts to bring a system with a standard or USB keyboard to the `ok` prompt. For more information about system keyboards, see "About OpenBoot Emergency Procedures" in the *Sun Fire 880 Server Owner's Guide.*

a. If the system responds to the `Stop-A` command, issue the `printenv` command to display the OpenBoot configuration variables.

For more information about OpenBoot configuration variables, see "About POST Diagnostics" in the *Sun Fire 880 Server Service Manual*.

b. Set the `diag-switch` variable to `true` and the `diag-level` variable to `max`.

4. Issue the `sync` command to obtain a crash (core) dump file.

Saved core dump files provide invaluable information to your support provider to aid in diagnosing any system problems. For further information about core dump files, see "Managing System Crash Information" in the Solaris *System Administration Guide*.

The system will reboot automatically after issuing the `sync` command, provided that the OpenBoot configuration variable is set to `autoboot` (the default value).

5. If you were not able to bring the system to the `ok` prompt, place the security keyswitch to the Diagnostics position.

This forces the system to run POST and OpenBoot diagnostics during system startup.

a. Press the system Power button for five seconds.

This causes an immediate hardware shutdown.

b. Wait at least 30 seconds; then power on the system by pressing the system Power button.

6. **Use the POST and OpenBoot diagnostics tools to diagnose system problems.**

   When the system initiates the startup sequence, it will run POST and OpenBoot diagnostics during system startup. For more information about these tools, see "Diagnostics and Troubleshooting" in the *Sun Fire 880 Server Service Manual*.

7. **If the system is able to reboot, review the contents of `/var/adm/messages` for more information about the system's state. Look for the following information.**

   - Any large gaps in the time stamp of Solaris or application messages.
   - Warning messages about any hardware or software components.
   - Information from last root logins to determine if any system administrators can add any comments about the system state at the time of the hang.

Supported Sun Rack for the Sun Fire 880

Currently, the only supported Sun rack for the Sun Fire 880 server is the StorEdge Expansion Rack, Sun part number SG-XARY030A. An optional door, Sun part number X9818A, is available for this rack.

Sun Fire 880 Server Rackmounting Caution Reminder

Caution – As stated in the *Sun Fire 880 Server Rackmounting Guide,* do not attempt to lift the server until you remove all CPU/Memory boards, all power supplies, all CPU fan trays, and all I/O fan trays. Once these components are removed, four persons are required to lift the system.

The four lifting handles included in the rackmounting kit are not designed to support the weight of a fully populated system.

Documentation Errata

Correction to the Motherboard Fan Tray Removal Procedure

The procedure "How to Remove a Motherboard Fan Tray" in the *Sun Fire 880 Server Service Manual* is incorrect. On systems configured with the redundant cooling option, removing motherboard fan tray 5 (the primary motherboard fan tray) requires that you disconnect the cable for motherboard fan tray 6.

The procedure should include the following steps after Step 2 in the manual, in this order:

3. **Loosen the captive screw on the fan tray you are going to remove.**
4. **Disconnect the fan tray cable from the fan tray you are going to remove.**
5. **If you are removing fan tray 5 and fan tray 6 is installed, disconnect the cable to fan tray 6 and drape it out of the way so that you can remove fan tray 5.**

Note – When both motherboard fan trays are not operational in a running Sun Fire 880 system, the environmental monitoring software generates warning messages that the fan trays are removed. If an operational fan tray is not installed quickly, the system may initiate a thermal shutdown. During motherboard fan tray hot-plug procedures, to avoid these messages and potential cooling issues resulting in a system thermal shutdown, reconnect the motherboard fan tray cables for functional fans as soon as possible.

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6. **Slide the fan tray you are removing out of the system.**
7. **If you disconnected the cable to fan tray 6 to remove fan tray 5, reconnect the cable to fan tray 6.**

   If you disconnected the cable to fan tray 6 as part of a hot-plug procedure for fan tray 5 and you are immediately replacing fan tray 5, do not reconnect the cable to fan tray 6 until you install fan tray 5.

Correction to the Motherboard Fan Tray Installation Procedure

The procedure "How to Install a Motherboard Fan Tray" in the *Sun Fire 880 Server Service Manual* is incorrect. On systems configured with the redundant cooling fans option, installing motherboard fan tray 5 (the primary motherboard fan tray) requires that you disconnect the cable for motherboard fan tray 6.

The procedure should include the following steps in this order:

1. **Locate the slot into which you want to install the motherboard fan tray.**

   a. **If you are installing fan tray 5 and fan tray 6 is installed, disconnect the cable to fan tray 6.**

Note – When both motherboard fan trays are not operational in a running Sun Fire 880 system, the environmental monitoring software generates warning messages that the fan trays are removed. If an operational fan tray is not installed quickly, the system may initiate a thermal shutdown. During motherboard fan tray hot-plug procedures, to avoid these messages and potential cooling issues resulting in a system thermal shutdown, reconnect the motherboard fan tray cables for functional fans as soon as possible.

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2. **Align the fan tray to be installed with its plastic guide in the chassis.**
3. **Slide the fan tray into the chassis.**
4. **If you disconnected the cable to fan tray 6 to install fan tray 5, reconnect the cable to fan tray 6.**

   Continue the procedure at step 4 in the *Sun Fire 880 Server Service Manual.*

   For more information, see "About Fan Trays" in the *Sun Fire 880 Server Owner's Guide* or the *Sun Fire 880 Server Service Manual.*

Correction to Disk Drive Installation Procedure

The procedure "How to Install a Disk Drive" as documented in the *Sun Fire 880 Server Service Manual* and the *Sun Fire 880 Server Owner's Guide* is incomplete. The following task should be included in the procedure after Step 10:

11. **If you are installing more than one disk drive as part of a hot-plug procedure, wait for the green light on the drive you just installed to light steadily (not flashing) before installing another drive.**

Correction to FC-AL Disk Cage Installation Procedure

The procedure "How to Install the FC-AL Disk Cage" as documented in the *Sun Fire 880 Server Service Manual* is incomplete. The following task should be included as Step 9c:

9c. If a Sun StorEdge PCI Dual Fibre Channel Host Adapter card is installed to control Loop B of the FC-AL disk backplane, connect the card's FC-AL data cable to the base backplane at connectors C(J01100) and D(J01101).

Correction to FRU Part Numbers

Ordering DIMMs

DIMMs for the Sun Fire 880 are no longer available in kits of four DIMMs. The following table lists the single DIMMs and their part numbers for the Sun Fire 880.

DIMM Description	Part Number
128 MB DIMM	501-4489
256 MB DIMM	501-5401
512 MB DIMM	501-5030

Part Number Corrections

Appendix A of the *Sun Fire 880 Server Service Manual* lists incorrect part numbers for the following field-replaceable units (FRUs):

- 18 GB 10K FC-AL Disk Drive - this drive is not supported in the system
- 72 GB 10K FC-AL Disk Drive

The correct FRU part numbers are as follows.

Part Description	Incorrect Part Number	Correct Part Number
18 GB 10K FC-AL Disk Drive	540-4191	Not supported in the Sun Fire 880 server
72 GB 10K FC-AL Disk Drive	540-4519	540-4905

Note – Disk drive capacities lower than 36 Gbytes are not supported on the Sun Fire 880 server.

The table for CPU Side Components transposes the part numbers for items 2 though 4. The corrected part numbers are as follows.

Key	Description	Part Number
2	CPU/Memory Board Status Assembly	540-4454
3	CPU Fan Tray	540-3614
4	CPU/Memory Board Air Baffle	540-4431

Correction to Cabling Instructions for Loop B PCI FC-AL Data Cable

The cabling instructions for the Loop B PCI FC-AL data cable are incorrect due to a late change to the labeling scheme on the cable's connectors.

The correct cabling information is provided below.

Cable Name	Part Number	Cable End	Connect To
Loop B PCI FC-AL data cable	530-3056	D	Base backplane at D
		C	Base backplane at C
		P3	PCI card at J3
		P4	PCI card at J4

Note that the following sections of the *Sun Fire 880 Server Service Manual* are affected by this change:

- "How to Install the Sun StorEdge PCI Dual Fibre Channel Host Adapter Card"
- "Cable Routing"

Correction to Expansion FC-AL Backplane Installation Procedure

The procedure "How to Install the Expansion FC-AL Backplane" as documented in the *Sun Fire 880 Server Service Manual* is incomplete. The following should be included in the procedure before the reconfiguration boot instructions in the "What Next" section.

1. **After installing an expansion backplane, power on the system and bring the system up to the `ok` prompt.**

2. **Allow the system to remain at the `ok` prompt for at least 10 minutes to ensure that the two backplanes are loaded with the same version of firmware.**

   The system automatically synchronizes the firmware versions between the two backplanes.

3. **After the required waiting period, boot the system to single-user mode.**

```
ok boot -s
```

4. **To verify that the firmware synchronization process has successfully completed, type the following `luxadm` subcommand:**

```
# luxadm display enclosure_name
```

   Where *enclosure_name* is the enclosure name assigned to the Sun Fire 880 internal storage array—by default, `FCloop`. If you need to verify the enclosure name first, use the `luxadm probe` subcommand.

   The output of the `display` subcommand shows the status of each SSC100 in the system. The following is an excerpt of sample output for a dual-backplane system.

```
SSC100's - 0=Base Bkpln, 1=Base LoopB, 2=Exp Bkpln, 3=Exp LoopB
    SSC100 #0:    O.K.(9224/ 120A)
    SSC100 #1:    O.K.(9224/ 120A)
    SSC100 #2:    O.K.(9224/ 120A)
    SSC100 #3:    O.K.(9224/ 120A)
```

   Verify that each SSC100 processor displays an "O.K." status and that each displays the same firmware version in parentheses. If so, the firmware synchronization process has successfully completed. Otherwise, wait another two minutes or so and repeat this step.

Note – For more information about the `luxadm` utility, see *Platform Notes: Using luxadm Software*, part of the Solaris on Sun Hardware AnswerBook2 Set on the Supplement CD.

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5. **Once the firmware synchronization process is complete, you can restore the system to multi-user mode.**

   For example, type:

```
# init 3
```

Correction to Displaying POST Results

The command for displaying POST results in the *Sun Fire 880 Server Service Manual* is incorrect. To display the results of POST testing, type `show-post-results` at the `ok` prompt. The following is an abbreviated eaxmple of the command and output.

```
ok show-post-results
CPU0/Memory:     OK
CPU1/Memory:     OK
...
```

Correction to the `diag-trigger` Setting for Enabling ASR

The `diag-trigger` information in "How to Enable ASR" in the *Sun Fire 880 Server Owner's Guide* is misleading. Step 2 recommends setting the `diag-trigger` variable to `power-reset`, `error-reset`, or `soft-reset`. However, setting the variable to `power-reset` requires the user to power cycle the system in order for the system to deconfigure the failed hardware component.

Since the purpose of ASR is to provide for an automatic system recovery from certain types of hardware failures, setting `diag-trigger` variable to `power-reset` does not allow for an automatic recovery from a hardware failure. To enable ASR for an automatic recovery from a hardware failure, set the `diag-trigger` variable to `error-reset` or `soft-reset` as shown in the following example.

```
# ok setenv diag-trigger soft-reset
```

Note – The ASR feature is not activated until you enable it at the system ok prompt. For more information about ASR, see the *Sun Fire 880 Server Owner's Guide*.

Correct Usage of the `ifconfig` Command for PCI Hot-Plug

The procedure for hot-plugging a PCI card on a Sun Fire 880 Server running the Solaris 8 07/01 or 10/01 operating environment in the *Sun Fire 880 Dynamic Reconfiguration User's Guide* does not fully explain the syntax for the `ifconfig` command. To prepare a PCI card for removal using the `ifconfig` command, you must first use the `down` option and then the `unplumb` option. To prepare a PCI card for installation using the `ifconfig` command, you must first use the `plumb` option and then the `up` option. The `ifconfig` syntax for removing a PCI card is as follows.

```
# ifconfig hme2:1 down
# ifconfig hme2:1 unplumb
```

The `ifconfig` syntax for installing a PCI card is as follows.

```
# ifconfig hme2:1 plumb
# ifconfig hme2:1 up
```

See the *Sun Fire 880 Dynamic Reconfiguration User's Guide* for more information on Sun Fire 880 hot-plug operations.

Note – Not all PCI cards support PCI hot-plug operations. See the *Sun Fire 880 Server Owner's Guide* and "Sun PCI Cards That Support PCI Hot-Plug" on page 5 of these Product Notes for more information on hot-plugging PCI cards.

Correction to the Attachment Point IDs for DR Procedures

On a Sun Fire 880 system running the Solaris 8 07/01 or 8 10/01 operating system, the attachment points for PCI cards are not displayed as they are described the *Sun Fire 880 Dynamic Reconfiguration User's Guide*. See "PCI attachment points should be generic (BugID 4388625)" on page 26 in these Product Notes for a complete description of the current attachment point ids.

Open Issues

This section describes bugs and anomalies associated with the Sun Fire 880 server. In many cases, software patches that provide fixes for these bugs are available. Visit the SunSolve Online web site, or contact your Sun authorized service provider for information about patch availability. For more information, see "Required And Recommended Software Patches" on page 3.

System panics if a PCI hot-plug operation is started while another operation is still in progress (BugID 4452433)

On Sun Fire 880 systems running the Solaris 8 7/01 operating environment, if you try to initiate a PCI hot-plug operation while another PCI hot-plug operation is still in progress, the system may panic. This can happen regardless of whether you use a hot-plug push button or the Solaris `cfgadm` command to initiate the operation.

Workaround – Always wait for a hot-plug operation to complete its function before initiating a new operation.

Sun Fire 880 hardware watchdog feature does not work with Solaris 8 (BugID 4374518)

The hardware watchdog feature does not work on Sun Fire 880 systems running the Solaris 8 operating environment. For a description of the hardware watchdog mechanism, see "About Reliability, Availability, and Serviceability Features" in the *Sun Fire 880 Server Owner's Guide*.

Note – Patches 108528-12 and 109888-13 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

Issuing the `XIR` command from RSC causes the system to reset (BugID 4411330)

On Sun Fire 880 systems, issuing the `XIR` command from RSC causes the system to reset rather than issuing an interrupt placing the system at the OpenBoot prompt.

Note – For further information about this issue, see the SunSolve Online web site.

RSC incorrectly reports an unplugged power supply as OK (BugID 4421087)

On a Sun Fire 880 system running Remote System Control 2.1 software delivered with the Solaris 8 7/01 operating environment, if a power supply is unplugged or has lost AC power for any reason, RSC does not log this as a problem or generate an alert.

Note – Removing RSC 2.1 and installing RSC 2.2 or later fixes this issue. RSC 2.2 is delivered with Solaris 8 10/01.

Empty fan tray generates fault messages in the RSC event log (BugID 4470063)

On a Sun Fire 880 system running Remote System Control 2.1 software delivered with the Solaris 8 7/01 operating environment, for any fan tray bay that is unoccupied, RSC will continually log fan failure messages to the RSC event log. These error messages are generated once every hour.

Note – Patch 111416-05 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

Removing disk drives during hot-plugging requires `devfsadm -C` command (BugID 4418718)

On a Sun Fire 880 system running the Solaris 8 7/01 operating environment, when removing a disk during a hot-plug procedure, device nodes are not removed automatically by the system. After you have removed the disk drive, the system cannot tell if the disk drive is present so the disk hot-plug procedure does not fully complete its function. This occurs when removing a drive using the `luxadm remove_device` command or when pulling the drive from the system to initiate the hot-plug procedure.

Workaround – Issue the `devfsadm -C` command after you remove the drive.

Note – Patch 108528-12 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

`picld` died during SunVTS run, no errors reported (BugIDs 4418396, 4486083)

On a Sun Fire 880 system running the Solaris 8 7/01 operating environment, when using SunVTS™ software to perform continuous stress testing, the `picld` daemon can sometimes die after an extended test run. Since the environmental monitoring software is dependent on the `picld` daemon, this effectively disables the system's environmental monitoring capability. Environmental monitoring is necessary for stable system operation.

Note – Patch 110460-13 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

SunVTS `dpmtest` fails on dual-loop internal storage array (BugID 4487855)

If you use SunVTS 4.4 software on a Sun Fire 880 system that includes a Sun StorEdge PCI Dual Fibre Channel Host Adapter card to control Loop B of the internal storage array, the SunVTS `dpmtest` will fail. This test failure results from a problem in the SunVTS diagnostic code and should not be interpreted as a problem with the server or its internal storage array.

Note – Patch 111854-01 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

Wrong packet error seen by loopback subtest in `dpmtest` (Bug ID 4493252)

On Sun Fire 880 systems running SunVTS 4.4 and executing the dpmtest concurrently on both fibre and I^2C interfaces, a rare race condition exists in which commands from each side may arrive at the backplane essentially simultaneously and the response from one may overwrite part of the other, causing a false error message in Sun VTS. The error message will be similar to the following message:

```
VTSID 6021 dpmtest.do_fibre_loopbacks.ERROR ses0:Sent loopback
packet 0x8B on ses0 but received packet 0x0 Probable_Cause(s):
(...)
```

This condition is self-correcting, and will not occur in rapid succession except in a true failure situation. Therefore, if this message is seen in isolation, or with at least 10 minutes separation from any other occurrence of the same message, it can be safely disregarded.

Note – For further information about this issue, see the SunSolve Online web site.

`prtdiag` reports fan failures as ENABLED with a speed of 0 (BugID 4431194)

On Sun Fire 880 systems running the Solaris 8 7/01 or 8 10/01 operating environment, the Solaris `prtdiag` command will sometimes report a failed fan as being ENABLED. This situation can arise when a fan tray assembly has failed and there is no redundant fan tray assembly for the system to activate. In this case, the fan tray with the faulty fan remains ENABLED (it continues to receive power) so that the other fan in the fan tray can continue to operate. The ENABLED status should not be interpreted as an OK status. It simply indicates that the fan tray is

receiving power. To determine if a fan is faulty, check its fan speed displayed in the `prtdiag` output. A fan speed of zero should be interpreted as a fan failure. Also, any fan failure will light the fan tray's Fault LED and the System Fault and Thermal Fault LEDs on the server's front panel.

Note – Patch 110849-08 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

`hsfs: hsnode` table full (BugIDs 4082275, 4475306)

For a Sun Fire 880 system running the Solaris 8 7/01 operating environment, if you attempt to set up the system as a Solaris install server, the following error message may appear during installation of the install server packages or patches:

```
NOTICE: hsfs: hsnode table full
```

If this message appears, the software installation will terminate prior to completion, and the install server software will be only partially installed.

Workaround – To recover from this situation, add the following line to the `/etc/system` file and reboot the system:

```
set hsfs:nhsnode=1000
```

Once the system has booted, repeat the procedure for setting up the install server.

Intermittent `picld` errors during power supply hot-plug (BugID 4431165)

On Sun Fire 880 systems running the Solaris 8 7/01 or 8 10/01 operating environment, the following `picld` error messages may be temporarily generated after hot-swapping a redundant power supply:

```
ERROR running psvc_ps_device_fail_notifier_policy_0
No such device or address
ERROR running psvc_ps_overcurrent_check_policy_0
No such device or address
```

These warnings do not indicate a problem with the server or power supply. For a brief time during the hot-swap operation, the environmental monitoring software is unable to monitor the environmental conditions of the power supply, which results in the error messages. This state is temporary, however, as full monitoring capabilities are restored within 30 seconds.

Note – Patch 110849-08 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

Sun Expert3D-Lite PCI graphics accelerator card hangs system (BugID 4474181)

The Sun Expert3D-Lite™ PCI graphics accelerator card (Sun part number X3684A) is not supported in Sun Fire 880 systems. If you use this card on a Sun Fire 880 system, the system may hang under the Solaris Common Desktop Environment when certain windows are resized. In some cases, the system may lock with a black screen and you will be unable to reboot the system.

Note – For further information about this issue, see the SunSolve Online web site.

CPU/Memory slot fault LEDs do not light for overtemperature conditions (BugID 4451164)

On Sun Fire 880 systems running the Solaris 8 7/01 or 8 10/01 operating environment, the Fault LED associated with each CPU/Memory board slot does not light in response to a CPU overtemperature condition. However, the front panel System Fault and Thermal Fault LEDs do light under these conditions and the system generates a warning message that indicates which CPU is the source of the problem.

Note – Patch 110849-08 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

SCSI warning when running SunVTS with an attached D1000 disk array (BugID 4482342)

If you use SunVTS 4.4 software on a Sun Fire 880 server that is connected to a Sun StorEdge™ D1000 disk array, the system will generate SCSI warning messages immediately after you invoke SunVTS software. The body of each warning message contains the following text:

```
Resetting scsi bus, data overrun
```

These warnings result from a problem in the SunVTS diagnostic code and should not be interpreted as a problem with the server or attached disk array.

Note – Patch 111854-01 or later fixes this issue. See "Required And Recommended Software Patches" on page 3.

Hot-plug function is not disabled when only one power supply exists (BugID 4408237)

A Sun Fire 880 system with only one working power supply is an unsupported configuration. A system configured with the minimum two power supplies (the non-redundant configuration) may shut down abruptly if either power supply fails.

However, on a system with only two power supplies, if one power supply fails, the system may continue operating with only one functional power supply. In this degraded state, if you then attempt to add a PCI card through a hot-plug operation, the additional power demands of the card may exceed the capacity of a single supply, resulting in an immediate system shutdown. The Solaris 8 7/01 operating environment does not recognize a Sun Fire 880 configuration with one power supply and does not inhibit PCI hot-plug operations under these circumstances. Installation of an optional third power supply enables the system to remain fully operational should any single supply fail.

CE memory reporting is ambiguous (BugID 4491362)

On a Sun Fire 880 system running the Solaris 8 07/01 or 8 10/01 operating system, if a dual inline memory module (DIMM) encounters a `ce` error, Solaris will not identify the correct CPU/Memory board that the failing DIMM resides on. Solaris reports the correct DIMM location within the CPU/Memory board, but Solaris does not identify which CPU/Memory board in the system that the failing DIMM resides on.

Workaround – To correctly identify the failing DIMM, use the following procedure.

1. **Bring the system to the `ok` prompt.**

   a. **Place the security keyswitch to the Diagnostics position.**

   This forces the system to run POST and OpenBoot diagnostics during system startup.

   b. **Press and release the system Power button.**

   Pressing the Power button initiates a graceful software system shutdown.

   c. **After the system has powered off, wait at least 30 seconds. Then power on the system by pressing the system Power button.**

   When the system initiates the startup sequence with the keyswitch in the Diagnostics position, it will run POST and OpenBoot diagnostics tests during system startup. For more information about POST and OpenBoot, see “Diagnostics and Troubleshooting” in the *Sun Fire 880 Server Service Manual*.

2. **Use the output from the POST tests to identify the failing DIMM.**

   For more information about displaying POST results, see "How to Use POST Diagnostics" in the *Sun Fire 880 Server Service Manual.*

3. **If POST displays the memory error as an `MTAG` error, then POST will not identify the failing DIMM correctly. In this case, see the Info Doc "Identifying `MTAG` DIMM errors on the Sun Fire 880" on SunSolve Online web site.**

PCI Hot-plug insert message is wrong for slots 7 and 8 (BugID 4546219)

On a Sun Fire 880 system running the Solaris 8 07/01 or 8 10/01 operating system, the message sent to the console during a hot-plug event on PCI slots 7 and 8 reverses the slots. If a card is inserted into slot 7, the system will reply to the console with a message containing the following text.

```
Device PCI8_CARD inserted
```

This bug effects only the display of the incorrect slot for the insert message. The drivers and other related hot-plug activity all occur on the correct PCI slot. When you continue with the hot-plug procedure by pressing the hot-plug button for the newly inserted PCI card in slot 7, the power-on message displays the correct slot number, with a message containing the following text.

```
card is powered on in the slot hpc0_slot7
```

Note – For further information about this issue, see the SunSolve Online web site.

PCI attachment points should be generic (BugID 4388625)

The description of the attachment point ids (Ap_Id) for PCI cards in the *Sun Fire 880 Dynamic Reconfiguration User's Guide*, shown in the following example, is incorrect for Sun Fire 880 systems running the Solaris 8 07/01 or 8 10/01 operating system.

```
# cfgadm
Ap_Id                  Type         Receptacle  Occupant    Condition
pci0                   pci-pci/hp    connected    configured   ok
pci1                   pci-pci/hp    connected    configured   ok
pci2                   pci-pci/hp    connected    configured   ok
pci3                   unknown       connected    configured   ok
```

```
pci4                    display/hp   connected    configured   ok
pci5                    pci-pci/hp   connected    configured   ok
pci6                    mult/hp      connected    configured   ok
pci7                    unknown      connected    configured   ok
pci8                    ethernet/hp  connected    configured   ok
```

Currently, the attachment points for PCI cards on Sun Fire 880 systems running the Solaris 8 07/01 or 8 10/01 operating system are as follows.

```
# cfgadm
Ap_Id                   Type        Receptacle  Occupant    Condition
pcisch0:hpc1_slot2      pci-pci/hp   connected    configured   ok
pcisch0:hpc1_slot3      pci-pci/hp   connected    configured   ok
pcisch0:hpc1_slot4      pci-pci/hp   connected    configured   ok
pcisch0:hpc1_slot5      unknown      connected    configured   ok
pcisch2:hpc2_slot2      display/hp   connected    configured   ok
pcisch2:hpc2_slot3      pci-pci/hp   connected    configured   ok
pcisch2:hpc2_slot4      mult/hp      connected    configured   ok
pcisch3:hpc0_slot1      unknown      connected    configured   ok
pcisch3:hpc0_slot2      ethernet/hp  connected    configured   ok
```

When using c`fgadm` commands, use the attachment point id displayed by the `cfgadm` command. The following example shows the current attachment point ids and correct c`fgadm` command syntax for a Sun Fire 880 system.

```
# cfgadm
Ap_Id                   Type        Receptacle  Occupant    Condition
pcisch0:hpc1_slot2      pci-pci/hp   connected    configured   ok
...
pcisch3:hpc0_slot2      ethernet/hp  connected    configured   ok

# cfgadm -c disconnect pcischO:hpc1_slot2
```

Status LED may not shut off after PCI hot-plug (BugID 4403481)

On a Sun Fire 880 system running the Solaris 8 07/01 or 8 10/01 operating system, during some PCI hot-plug events the system status (front panel) ok-to-remove LED may remain lit even after the PCI card has been succesfully removed.

Note – For further information about this issue, see the SunSolve Online web site.
